



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029**

**28 JUL 2010**

Colonel Robert D. Peterson  
District Engineer  
U.S. Army Corps of Engineers  
Huntington District  
502 Eighth Street  
Huntington, WV 25701

Re: PN LRH-2009-31-BCR; Raven Crest Contracting, LLC; Boone #5 Surface Mine; Boone County, West Virginia

Dear Colonel Peterson:

The U.S. Environmental Protection Agency (EPA or Agency) has reviewed the public notice for Raven Crest Contracting, LCC's Boone #5 Surface Mine located near Racine, Boone County, West Virginia. The project's proposal involves the direct impact to 15,079 linear feet (lf) of Roundbottom Creek and Mill Branch near Racine, Boone County, West Virginia. The project utilizes the mine through method resulting in impacts to 700 lf of perennial stream, 5,855 lf of intermittent stream and 5,861 lf of ephemeral stream. The construction of 5 in-stream sediment control ponds temporarily impacts 1,108 lf of perennial stream, 1,555 lf of intermittent stream and 0.1 acre of open water. No valley fills are proposed with the project. The applicant is proposing sediment pond removal, reconstruction of stream segments affected by sediment ponds and mine through areas, and off-site enhancement of Roundbottom Creek and tributaries to Roundbottom Creek.

The project is located in the Drawdy Creek-Big Coal River Subwatershed (HUC-12) and the Coal River Sub Basin (HUC-8). The Roundbottom Creek and tributaries of Roundbottom Creek are currently not listed as impaired on the West Virginia Clean Water Act (CWA) Section 303(d) list. The Coal River, was listed on the 303(d) List in 2004. In 2006, a total maximum daily load (TMDL) for the Coal River Sub-Basin was approved for metals, pH, selenium, biological, and fecal coliform.

No specific stream data for Roundbottom Creek and Mill Branch was provided in the Public Notice. Based on information available to EPA, the creek immediately to the east of the proposed site, Foster Hollow, has a WVSCI score of 98 indicating an exceptional biological community. Using a macroinvertebrate genus level multi-metric index, Foster Hollow is in excellent condition, with the Observed/Expected (O/E) genus ratio >1.0 indicating equivalent or better than WVDEP reference sites with regard to the expected native fauna. Lacking specific supporting water quality and biological data for Roundbottom Creek and Mill Branch, it is reasonable to assume that the condition of Roundbottom Creek and Mill Branch may be similar



to that of Foster Hollow as they are situated in the same area, and based upon information available to EPA, appear to have similar conditions. We are concerned that the proposed activities may cause or contribute to significant degradation of streams proposed to be filled and further impair water quality downstream. EPA requests further data and support documentation for this project for our review.

EPA's review and comments, herein provided, are based upon the Public Notice for this project and the information contained therein. EPA's review is intended to ensure that the proposed project meets the requirements of the Clean Water Act (CWA). The CWA Section 404(b)(1) Guidelines (40 C.F.R. Part 230) provide the substantive environmental criteria against which this application must be considered. Fundamental to the Guidelines is the premise that no discharge of dredged or fill material may be permitted if: (1) it causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable state water quality standard; (2) a practicable alternative exists that is less damaging to the aquatic environment; or (3) the nation's waters would be significantly degraded.

On April 1, 2010, EPA released interim final guidance to the Regional offices titled: *Guidance on Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order* (SCM Guidance). The SCM Guidance provides a framework for the Regions when they review permits for discharges associated with Appalachian surface mining projects. At the same time, EPA released two Office of Research and Development (ORD) reports: *The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields* and *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams (Benchmark Conductivity Study)*. The ORD reports have been submitted to the EPA Science Advisory Board (SAB) for review and are also publicly available. In the interim, EPA views the reports as providing information, along with published, peer-reviewed scientific literature, that may inform permit reviews.

#### **Alternatives Analysis – 40 CFR 230.10(a)**

According to the Section 404(b)(1) Guidelines, only the least environmentally damaging practicable alternative (LEDPA) can be permitted, and to identify the LEDPA, the applicant's alternatives analysis must examine a full range of alternatives that would avoid and minimize impacts to aquatic resources to the maximum extent practicable. The applicant's alternative analysis provided in the public notice included the no build, the preferred proposed alternative, and a non-mine through alternative. A brief discussion of alternatives for the placement of sediment control ponds was also included in the public notice. A more detailed discussion of alternatives should be provided in order to determine the LEDPA. Specifically, EPA recommends continued evaluation of the project to identify opportunities through practicable, modern engineering, mining methods, and materials handling that would further reduce stream impacts. In addition, an alternatives analysis should incorporate environmentally effective limits on the linear extent of stream impacts per ton of excess spoil produced, which may minimize impacts to streams. EPA notes that the applicant has proposed to over-stack a portion of the excess overburden in the backfilled area above approximate original contour (AOC), but more



information should be provided to ascertain if the amount of overburden has been maximized or if additional configurations are possible.

Options for the disposal of mine waste in uplands must be fully evaluated, which includes examining the remaining capacity at adjacent mines. The applicant has also proposed to haul overburden to an adjacent site, Boone North #2, but the amount of material to be transported is unclear. More information is needed about Boone North #2 and about other possible off-site disposal opportunities. Additional information should be provided regarding the size and number of sediment ponds currently proposed for this project. While achieving adequate sediment control, the applicant should minimize the number of sediment ponds placed in waters of the U.S. Efforts to reduce impacts resulting from the proposed project should be clearly documented and quantified.

The alternatives analysis provided in the public notice did not discuss alternatives in construction techniques or best management practices to protect water quality and prevent significant degradation of the aquatic ecosystem. Stream impacts should be avoided to the maximum extent practicable and spoil placement should be controlled to reduce drainage through overburden into streams in order to help protect downstream water quality. The applicant must demonstrate prior to authorization and construction of the proposed action that the project will not cause or contribute to significant degradation and/or an excursion from applicable water quality standards.

**Compliance with Other Environmental Standards – 40 CFR 230.10(b)/Significant Degradation of the Aquatic Ecosystem – 40 CFR 230.10(c)**

40 C.F.R. Section 230.10(b)(1) of the CWA Section 404(b)(1) Guidelines states that “no discharge of dredged or fill material shall be permitted if it causes or contributes, after consideration of disposal site dilution and dispersion, to violation of any applicable State water quality standard.” The Guidelines, at 40 C.F.R. Section 230.10(c) also prohibit any discharge of dredged or fill material which would cause or contribute to significant degradation of the aquatic ecosystem, with special emphasis placed on the persistence and permanence of effects, both individually and cumulatively. EPA is concerned that the applicant has not demonstrated that the project as proposed will comply with Sections 230.10(b) and (c).

The best information available to the Agency, including published, peer-reviewed studies, indicate the activities proposed by the applicant are strongly related to downstream biological impairment, as indicated by raw taxonomic data, individual metrics that represent important components of the macroinvertebrate assemblage, or when multi-metric indices are considered. These studies show that surface mining impacts on aquatic life are strongly correlated with ionic strength in the Central Appalachian stream networks. Increased conductivity impairs aquatic life use, is persistent over time, and cannot be easily mitigated after-the-fact or removed from stream channels. These impairments can rise to a level of significant degradation and/or may result in a violation of West Virginia’s narrative water quality standards.



No baseline water quality or biological monitoring data was provided in the public notice for the streams which are proposed to be impacted or for downstream receiving waters. Such baseline data should be provided for waters on the proposed site location as well as downstream receiving waters. Additionally, EPA requests baseline and monitoring data and discharge information from the applicant's adjacent mine site, Boone North #2. This monitoring data may inform an assessment of the potential environmental effects of the proposed operation since Boone North #2 is situated in the same area as the proposed operation. The WVSCI score from a stream adjacent to the site, Foster Hollow, is 98. It is likely that the streams proposed to be impacted may have a similar biological community.

Based on the best information available to EPA, projects with predicted conductivity values below 300  $\mu\text{S}/\text{cm}$  generally are not likely to cause water quality violations or significant degradation of the aquatic ecosystem. Discharges with levels of conductivity above 500  $\mu\text{S}/\text{cm}$  generally are likely to be associated with adverse impacts that could cause or contribute to significant degradation and/or excursions from narrative water quality criteria. EPA recognizes that in certain fact-specific circumstances, instream conductivity levels greater than 500  $\mu\text{S}/\text{cm}$  may not cause adverse impacts to the biological community. To the extent the applicant believes that to be the case with this project, the applicant should supply an analysis of the ionic matrix and whether the discharge is dominated by calcium, magnesium, bicarbonate and sulfate and low in chloride. Where instream background conditions are limestone-dominated, that also should be noted. In addition, the applicant should provide an analysis of whether the native aquatic community is similar to that studied in the *Benchmark Conductivity Study* and in Pond, G.J., M. E. Passmore, F.A. Borsuk, L. Reynolds, and C. J. Rose. 2008, *Downstream effects of mountaintop coal mining: comparing biological conditions using family- and genus-level macroinvertebrate bioassessment tools*, J. N. Am. Benthol. Soc. 27(3):717–737. Any analysis based on differences of the native aquatic community should include a review of taxa (at the genus level) at applicable reference sites within the region.

#### **Minimization and Compensation for Unavoidable Impacts – 230.10(d)**

The applicant has proposed a conceptual mitigation plan in the Public Notice for the proposed impacts to waters of the U.S. which includes a total of 19,901 lf of stream mitigation. Restoration of 2,663 lf of stream impacted by sediment control structures, reconstruction of 12,416 lf of stream impacted by mine-through operations, off-site enhancement to 2,965 lf of perennial Roundbottom Creek, and off-site enhancement of 118 lf of intermittent and 1,739 lf of ephemeral tributaries to Roundbottom Creek is being proposed. Information provided in the Public Notice is limited and more specific detail on the compensatory mitigation plan is needed. Stream functional assessment information, which includes biological, chemical and physical components, should be provided for waters on the proposed site location as well as the enhancement reaches. Without this information it can not be determined if the applicant's proposed mitigation replaces lost stream functions and values. The mitigation proposal may not be adequate to replace lost stream functions and values.

EPA further recommends that the applicant incorporate into the monitoring plan observable and measurable biological and chemical parameters along with the proposed physical



parameters as benchmarks for success, i.e., performance standards, along with a timeframe in which the performance standards would be reasonably expected to occur. EPA suggests considering the use of a longer monitoring period than the currently proposed period of five years. Finally, an adaptive management plan should also be provided that identifies alternate plans and strategies should the mitigation plan not meet the required performance standards. EPA requests the opportunity to review and provide further comments as this plan is further developed.

### **Determination of Cumulative Effects on the Aquatic Ecosystem – 230.11(g)**

The Section 404(b)(1) Guidelines require consideration of cumulative impacts: “[A]lthough the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of the existing aquatic ecosystem.” There is evidence of potential significant cumulative impacts within the 8 digit HUC (hydrologic unit code) sub-basin due to mining activities. In addition to historic and ongoing mining, there are a number of proposed mining projects within the Coal River Sub-basin. With respect to the subwatershed, based on a review of geographic information system (GIS) data within the Drawdy Creek- Big Coal River Subwatershed, approximately 8.5% of the subwatershed has currently been mined, this appears to be one of the least impacted sub-watersheds within the Coal River sub-basin. The percentage of the subwatershed that is mined could increase to approximately 11% with the addition of the Boone North No.5 as currently proposed. This subwatershed, and the project area, as demonstrated by Foster Hollow, may be biologically diverse, contributing a significant source of freshwater dilution, and may be a vital area to maintaining the overall health of the Coal River.

Given the past, present, and proposed future mining activities within the Coal River Sub-basin, EPA recommends that the Corps conduct a thorough cumulative effects analysis which includes a detailed presentation of past, present and reasonably foreseeable activities. The analysis should describe the current state of the ecosystem, and consider affects on the human environment including impacts to the subwatershed from filling of streams and potential impacts to private drinking water wells and other drinking water supplies. This analysis should include, at a minimum, the function and habitat, and the effects of the hydrologic modifications to the sub-basin and subwatershed. It should also address the impact of deforestation on water quality, water quantity, and other ecological conditions within the sub-basin and subwatershed. These impacts should be compared to the attributes of healthy watersheds in the ecoregion with a goal towards assuring that the sub-basin and subwatershed within which the project is proposed will not be impacted beyond its current condition. We strongly suggest an approach that would manage and link proposed projects to overall water quality and habitat improvement on a sub-basin and subwatershed basis.

Finally, consistent with Executive Order 12898 entitled “Federal Actions to Address Environmental Justice In Minority Populations and Low-income Populations” and the accompanying Presidential Memorandum, EPA recommends that the Corps’ Section 404(b)(1) Guidelines and NEPA reviews analyze the potential for disproportionately high and adverse

effects on low-income or minority populations in the area of Boone North No. 5. Specifically, a characterization of the economic status of residents near the site and the conditions they face including any effects relating to the proximity of the blasting zone, locations of discharges of fill material, truck traffic, noise, fugitive dust, and habitat loss needs to be conducted. Additional information is also needed concerning sources of drinking water for the effected populations (including municipal water supplies and private sources of drinking water including streams and/or wells). EPA also recommends that you take steps to ensure meaningful engagement of affected communities.

## **Conclusion**

In conclusion, EPA believes that the project as currently proposed may not comply with the Section 404(b)(1) Guidelines, that the project may adversely affect water quality and result in significant degradation to the aquatic ecosystem, and that efforts need to be considered to address such impacts. In light of these concerns, EPA believes that the project may result in substantial and unacceptable impacts to aquatic resources of national importance, as covered in Part IV, paragraph 3(a), of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army. In addition, we believe that this proposal may require preparation of an Environmental Impact Statement (EIS). As you make your determination whether to prepare an EIS, we recommend that you consider the large scale of the proposed project, e.g., impacts to almost three miles of stream habitats. In addition, based on the information available to EPA, it is not clear that the mitigation proposal, as currently drafted, would serve as a basis for supporting a Finding of No Significant Impact. We would appreciate the opportunity to discuss with you this issue of whether an EIS should be prepared, as well as our other concerns with the permit application.

Thank you for the opportunity to provide comments on the proposed Boone North No.5 Surface Mine. Should you have any questions please feel free to contact Alaina DeGeorgio at 215-814-2741 or by email at [degeorgio.alaina@epa.gov](mailto:degeorgio.alaina@epa.gov).

Sincerely,



John R. Pomponio, Director  
Environmental Assessment and Innovation Division

